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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/069,830	07/16/2002	Peter Hessling	LEN-021022	5379

7590

01/24/2005

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EXAMINER

LOPEZ, FRANK D

ART UNIT	PAPER NUMBER
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3745

DATE MAILED: 01/24/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

ED

**Office Action Summary**

Application No.

10/069,830

Applicant(s)

HESSLING, PETER

Examiner

F. Daniel Lopez

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**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --****Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 09 November 2004.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 12, 13, 15 and 17-23 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☐ Claim(s) 12, 13, 15 and 17-23 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |   |   |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                        | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)    | Paper No(s)/Mail Date. _____  |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____   | 6) <input type="checkbox"/> Other: _____                                    |

***Continued Examination Under 37 CFR 1.114***

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on November 9, 2004 has been entered.

***Response to Amendment***

Applicant's arguments filed November 9, 2004 have been fully considered but they are not deemed to be persuasive.

Applicant's arguments with respect to claims 12, 13, 15 and 17-23 have been considered but are deemed to be moot in view of the new grounds of rejection.

Applicant argues that there is no teaching for the extensive modifications of Nichols, that the combination of Nichols and Trenner et al would destroy the functionality of Nichols, by having the grooves pass through the center of the shaft, and that the rejection improperly relies on hindsight. Applicant is mistaken. The new grounds of rejection relies on making a simple exchange from a one piece piston with piston teeth, and a two piece shaft with shaft teeth, to a two piece piston with piston teeth, and a one piece shaft with shaft teeth, since these two configurations are equivalent. Both of the other changes follow from this simple exchange.

The functionality of Nichols is not destroyed, by having the grooves in the shaft, because the grooves do not pass through the center of the shaft. Essentially, the diameter of the shaft is made larger, so that the bore area of the housing (having the same diameter as the shaft), can accommodate the shaft teeth. The groove is between the larger diameter bearing area and the teeth.

In response to applicant's argument that the examiner's conclusion of obviousness is based upon improper hindsight reasoning, it must be recognized that any judgment on obviousness is in a sense necessarily a reconstruction based upon hindsight reasoning. But so long as it takes into account only knowledge which was within the level of ordinary skill at the time the claimed invention was made, and does not include knowledge gleaned only from the applicant's disclosure, such a reconstruction is proper. See *In re McLaughlin*, 443 F.2d 1392, 170 USPQ 209 (CCPA 1971).

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

### ***Claim Rejections - 35 USC § 103***

Claims 12, 13, 15 and 17-23 are rejected under 35 U.S.C. § 103 as being unpatentable over Nichols in view of Trenner et al. Nichols discloses a pneumatic actuator comprising a shaft (44) rotatable in an axial direction perpendicular to an axis of a cylinder; a plastic piston (62, 66), movable in the cylinder and including piston teeth (74) extending along the axis, wherein the piston teeth engage shaft teeth (60) of the shaft; wherein the shaft has two same diameter bearing sites mounted directly in the housing at bearing areas; wherein the piston fixes the shaft in its axial direction by positive engagement of sides (72) of the piston forming a groove engaging sides of the toothed area, without additional fasteners; wherein the toothed area of the shaft has a larger diameter than the bearing sites; wherein the combination of the piston and piston teeth are in one piece (e.g. fig 3), but the shaft and shaft teeth are formed as two pieces (44, 50) fixed together; but does not disclose that the bearing sites form areas where the shaft has its greatest diameter; or that there is at least one peripheral groove in the shaft that engages a segment of the piston, running in the axial direction.

Trenner et al teaches, for an actuator comprising a shaft (2) rotatable in an axial direction perpendicular to an axis of a cylinder; a piston, movable in the cylinder and including piston teeth (11) extending along the axis, wherein the piston teeth engage

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shaft teeth of the shaft; wherein the shaft has two bearing sites (corresponding to 49, 50), such that the shaft is inserted into bearing areas corresponding to the bearing sites; that the toothed area of the shaft is integral with the shaft and slightly smaller than the largest diameter bearing site, wherein the shaft and shaft teeth are formed as one piece and the piston and piston teeth are formed as two pieces fixed together. It is understood that the purpose of the slightly smaller diameter of the toothed area is to prevent damaging the toothed area.

Since the two piece shaft and one piece piston of Nichols and the one piece shaft and two piece piston of Trenner et al are functionally equivalent in the rotatable actuator art, it would have been obvious at the time the invention was made to one having ordinary skill in the art to make the piston and piston teeth of Nichols in two pieces, fixed together, and the shaft and shaft teeth in one piece, as taught by Trenner et al, as a matter of engineering expediency, with the shaft teeth having a diameter slightly smaller than the diameter of the bearing site, as taught by Trenner et al, for the purpose of preventing damage to the toothed area. Note that a groove between each bearing site and the toothed would be needed, to accommodate the sides of the groove in the piston.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dan Lopez whose telephone number is 571-272-4821. The examiner can normally be reached on Monday-Thursday from 6:15 AM -3:45 PM. The examiner can also be reached on alternate Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ed Look, can be reached on 571-272-4820. The fax number for this group is (703) 872-9306. Any inquiry of a general nature should be directed to the Help Desk, whose telephone number is 1-800-PTO-9199.



F. Daniel Lopez  
Primary Examiner  
Art Unit 3745  
January 21, 2005